Concordia
UNIVERSITY

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April/May 1995

Engineering & Computer Science BITS

1995-96 NSERC Grants Awarded

NSERC grants for the 1995-96 academic year were announced at the beginning of April.

Members of Engineering and Computer Science received one conference grant ($2,230) and three infrastructure grants totaling $36,000. Six equipment grants worth $221,353 were awarded to researchers within the Faculty

- Dr. Richard Guy (CBS)
  Steady-State and Transient Sound Intensity measurement
- Dr. H. Jin (Electrical & Computer Engineering)
  A High-Frequency Digital Oscillo - scope for Harmonic Measurement
- Dr. Clement Lam (Computer Science)
  Upgrade for CICMA Computing Laboratory
- Dr. M. Saksena (Computer Science)
  SPARCstation 5 Workstation
- Dr. Ted Stathopoulos (CBS)
  Video-Image Processing System for Wind Flow Visualization
- Dr. M. Zaheeruddin (CBS)
  Development of Decentralized Computer Control Algorithms for Efficient Operation of HVAC Systems

Ninety-eight NSERC operating grants totaling $2,073,727 were awarded to applicants from within Engineering and Computer Science - a success rate of 89%. While the monetary value of operating grants has decreased by 8.7% from last year, it should be noted that decisions on six grants were still pending at the time of publication.

NSERC Operating Grants by Department

Centre for Building Studies
$364,400
18 grants

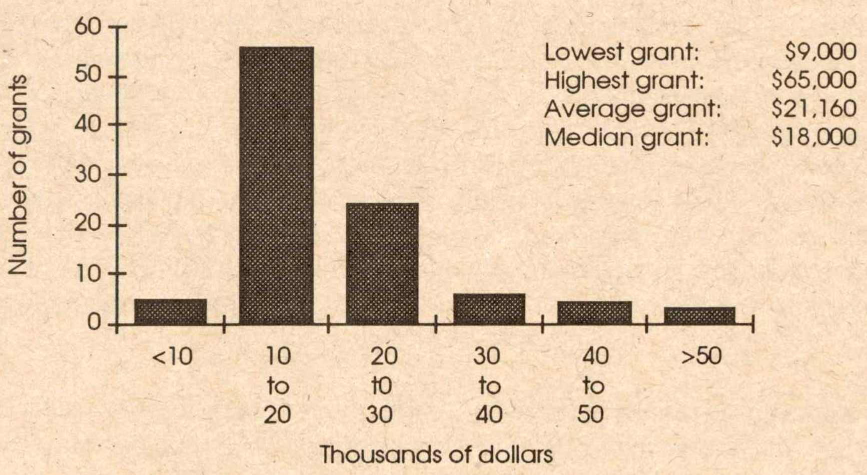
Civil Engineering
$135,200
7 grants

Computer Science
$545,926
25 grants

Electrical & Computer Engineering
$493,602
25 grants

Mechanical Engineering
$534,599
23 grants

NSERC Operating Grant Distribution



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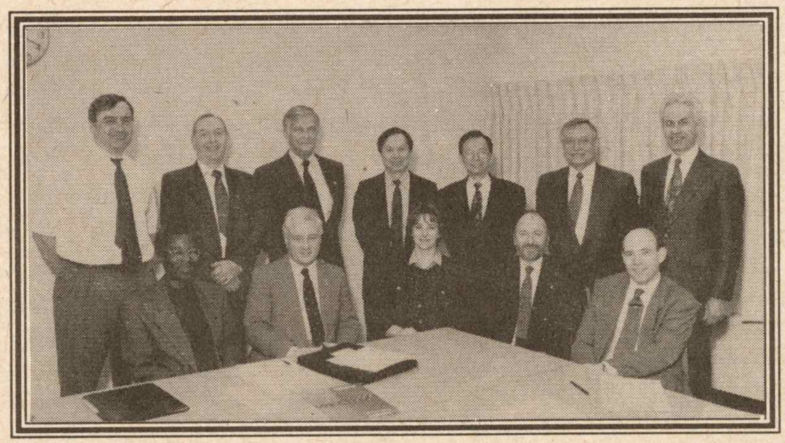
International Delegations Visit Concordia

In March and April, the Association of Universities and Colleges of Canada (AUCC) hosted several European delegations. Each group visited a number of Canadian institutions, including Concordia, during their stay.

On March 3, representatives from the Loughborough University of Technology, the Imperial College of Science and Technology, Manchester University and Warwick University, all in the United Kingdom, met with members of the Faculty. They were here to identify joint areas of research in the fields of manufacturing engineering, management engineering, electronics engineering and computer science. They also held preliminary discussions about the possibility of student exchange programmes at both the undergraduate and graduate levels.

On April 3, the Faculty welcomed a delegation from the Université des Sciences et Technologies de Lille (France) which was interested in increasing the number of student exchanges between itself and Concordia. A week later representatives from l'Institut National des Sciences Appliquées Lyon (INSA Lyon) visited Concordia. Their primary interest was increased student exchange under the France/Québec programme, but they also began discussions about possible research collaborations. Another delegation from INSA Lyon will visit the University on May 8.

In early March, the Ministry of Education in cooperation with the Ministry of International Affairs, Immigration and Cultural Communities and the British Council in Montréal welcomed a delegation of aerospace experts from British universities. The delegation was in Montréal to explore the possibilities for collaborative aerospace research projects between universities in Québec and universities in the United Kingdom. On Friday, March 10, they met with researchers at Concordia for a morning of discussions which touched on composite materials. flight simulation, antenna design, fuel control systems and robotics.



Pictured at left are the participants in the mornings events. Back row (L-R): Dr. J.V. Svoboda, Prof. F.D. Hamblin, Dr. T. Krepec, Dr. V.S. Hoa, Dr. T. Bui, Dr. S.J. Kubina, Dr. A. Blach Front row (L-R): Prof. D.I. Poll (University of Manchester), Prof. C.J.Harris (University of Southhampton), Ms. N. Towler, Dr. R.W. Ainsworth (Oxford University), Dr. D.J. Smith (University of Bristol)

Faculty Meets on Cutbacks

Concordia must cut $10 million dollars from its budget in the 1995-96 fiscal year. The Thursday Report of March 9, 1995 contained a special supplement from the Office of the Rector called, "Dealing with the Cuts: Budget Measures for 1995-96". The supplement outlined 14 proposed cost-saving measures which, if implemented throughout the University, would result in $7 to $8 million savings. The entire Concordia community has been called upon to respond to these expenditure reductions.

On March 22, Drs. Charles Bertrand (Interim Rector), Hal Proppe (Interim Vice-Rector Institutional Relations and Finance), and Robert Parker (Interim Vice-Rector Academic) met with the Faculty of Engineering and Computer Science to discuss the budget situation. They emphasized that the cutbacks would hit all areas of the University and that Concordia would have to become a smaller university. For the moment there are no plans for massive layoffs, but members of the panel said everything is on the table and up for revision. One cost-cutting step could see faculty members take on heavier course loads. However, those professors who were present in the audience expressed their concern about this measure because of its potential adverse impact on research activities. Both faculty and staff raised concerns regarding the complete absence of a performance review system within the University. They also expressed concern about morale within the Faculty given the sweeping nature of the cuts. The panel encouraged all members of the University community to become involved in the solution to Concordia's budget problems.

On Friday, April 21 a special meeting of Senate was called to discuss the academic implications of the budgetary cutbacks. It is expected that the operating budget for 1995-96 will be approved by the Board of Governors at it meeting on May 17.

CEGEP Advisors Visit Concordia

Attracting academically strong students to its programmes in engineering and computer science and providing them quality education remains among the Faculty's top priorities. With university enrollment down across the country, the Faculty is taking an increasingly proactive approach to recruiting in order to ensure it does not loose its share of the market. Seventy percent of undergraduate students in engineering and computer science come to the Faculty from one of Québec's eight English-language CEGEPs. On March 24, 1995, advisors from seven of these schools visited the Faculty at the invitation of Dean Donat J. Taddeo.

The advisors met with the Dean and members of the Faculty's Task Force on Recruiting and Retention in the Concordia Faculty Club. Dean Taddeo began the meeting with a presentation which situated the Faculty within the University and focused on the strength of its undergraduate student body. Afterwards, the advisors had the opportunity for an exchange with students from each of the Faculty's academic units. They were particularly interested in the process which the students had followed in choosing to study applied science at Concordia. The visitors were then invited to see the changes in the Industrial Engineering programme firsthand through a tour of the new Materials Handling Laboratory. Before lunch they returned to the Faculty Club to provide some feedback to the Faculty about it recruiting strategies. The advisors were able to offer several suggestions which are now under review by the Task Force on Recruiting and Retention.

A similar meeting was held with advisors from French-language CEGEPs on April 28.

International Cooperation with Jordan

In 1994, the Faculty of Engineering and Computer Science received an Educational Institutions Program grant from the Canadian International Development Association. The purpose of the $1.6 million, five-year grant is the development of Jordanian human resources through professional training, technology transfer and post-graduate course packages in the area of manufacturing. Concordia's partner in this project is the Jordan University of Science and Technology (JUST) in Irbid, Jordan.

In early March, a delegation from Concordia consisting of Dean Taddeo, Dr. Akif Bulgak (Mechanical Engineering) and Ms. Marie Berryman (Centre for International Academic Coordination) visited JUST to review the project and coordinate future activities. The team had a very successful visit during which it was able to:

- choose two students from JUST who will pursue graduate degrees in Mechanical Engineering at Concordia;
- identify two visiting scholars who will visit Concordia during the summer sessions of both 1995-96 and 1996-97;
- assess the capabilities of JUST and particularly those of the Mechanical Engineering Department in terms of faculty, programs, facilities etc...
- discuss the topic content of a workshop to be delivered by a Concordia faculty member at JUST in August 1995;
- identify and match joint areas of research of JUST and Concordia professors for future collaboration
- begin discussion for the expansion of current cooperation.

Secretary's Day

Wednesday April 26, 1995 was Secretary's Day. Thanks to all the members of our secretarial staff for their dedication and contributions to life in the Faculty

Centre for Building Studies

Donna Caputo
Nella Fioretino
Rosie Meldonian
Gloria Miller
Beatrice Simone

Civil Engineering

Lydia Del Pilar
Carol Plathan
Jane Venettacci

Computer Science

Terry Czernienko
Angie de Benedictus
Patricia Kierans
Halina Monkiewicz
Stephanie Roberts

Electrical & Computer Engineering

Kim Adams
Maria Buffone
Carleen DeVan
Pam Fox
Irene Mazis
Elaine Pigeon
Bonnie Weppler

Mechanical Engineering

Jayne Claassen
Isabella Kojic
Zsuzsanna Major
Sophie Merineau
Eleanor Morris
Carol Williams
Arlene Zimmerman

Office of the Dean

Agi Csordas
Lesia Dacko
Sheila De Souza
Barbara Fabian
Ann Franklin
Lorena Marzitelli
Hélène Rowe
Tazeta Taye

Faculty Sponsors Science Fairs

For more than a decade, the Faculty of Engineering and Computer Science has actively developed a proactive approach to encourage young people to consider applied science as an academic and career option. This approach began with internal initiatives such as the Summer Internship Programme and continues today through support of projects like REACH and Engineers of Tomorrow. Because young people with strong technological skills are so important to the future economic development of Québec and Canada, the Faculty also supports organizations outside Concordia who encourage students to explore science.

At this year's Bell Montréal Regional Science Fair (BMRSF) the Faculty sponsored seven awards. Five $100 prizes went to outstanding projects which focused on engineering and computer science. The Concordia University Bridging the Millennia Awards went to the top two projects at BMRSF. These awards will provide winners with travel assistance so that they may compete at the International Science and Engineering Fair which will be held in Hamilton, Ontario from May 7-13, 1995. Winners names appear below.

The Concordia University Prize for Outstanding Achievement in Building Engineering
Mark Ferreira and Marco Gualtieri
Secondary V, Loyola High School
Polymeric Foam

The Concordia University Prize for Outstanding Achievement in Civil and Environmental Engineering
Molly Gupta
Secondary I, The Study
Passive Solar Energy as Heating

The Concordia University Prize for Outstanding Achievement in Computer Science
Sorin Lerner
CEGEP II, Marianopolis College
File management

The Concordia University Prize for Outstanding Achievement in Electrical and Computer Engineering
John Pereira
CEGEP I, Marianopolis College
Computational Evolution

The Concordia University Prize for Outstanding Achievement in Mechanical and Industrial Engineering
Julianna Lin and Thanh Nguyen
CEGEP I, Marianopolis College
Changing Pages: There's got to be a better way

The Concordia University Bridging the Millennia Award
Vijay Pandurangan
Secondary IV, Centennial Regional High School
Robo-Thought: The Smart Machine

Ethan Toban and Nick Win Myint
Secondary IV, St. George's High School
Zebra Mussel Filtration Rates

The Faculty also sponsored two prizes at the Cree School Board's Third Regional Science Fair which was held at Maguatua Eeyou School in Wemindji, Québec. The winners, Flora Weistche and June Diamond from Wininekuu School in Waskagonish, will spend a week at Engineering Explorations, the Faculty's summer science camp for Aboriginal Students, in June. Their project was called "La distribution de l'eau et l'éléctricité".

Faculty Faces

Dr. Jean Drolet - Department of Civil Engineering

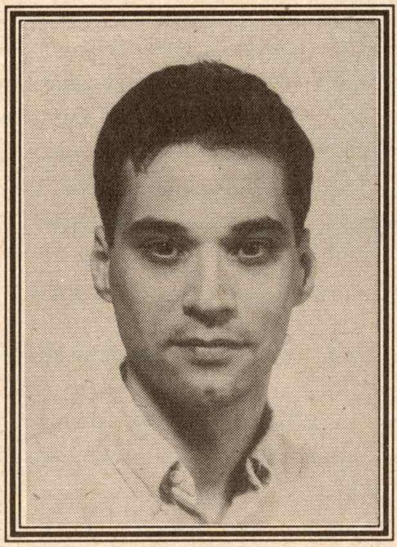
Faculty Faces is a regular feature of *Bits*, focusing on personalities within Engineering & Computer Science.

Dr. Jean Drolet is one of the new professors in Civil Engineering who specialise in environmental engineering. After being at Concordia for a year he says the experience "has been the biggest challenge in my career so far."

Jean Drolet received a Bachelor's degree in Civil engineering from Université de Laval in 1983. "I wasn't sure if I wanted to specialise in hydrology or structures until I spent the summer before my final year working in Denmark at the Danish Hydraulic Institute. It was then that I made my decision to go to graduate school." He applied to Master's programmes at a number of Canadian Universities, but his best offer was a scholarship from Princeton University in New Jersey. "The first three weeks were hell, I had never studied in English before." As a new graduate student, he also made the mistake of impressing his supervisor too early in the term. "Before classes started he gave me a copy of his book on finite-element analysis so I could take his course. I found a mistake in one of his calculations. Fortunately, I have the rest of my life to try and impress him that much again." His thesis, titled "Application and Analysis of the Wave Formulations of the Shallow Water Equation", was a simulation of tides in the North Sea. He defended about eight months after he started working at S.S. Papadopulos and Associates, a consulting firm in Maryland, because his supervisor was on sabbatical.

At Papadopulos Dr. Drolet had the opportunity to work on ground water and soil remediation for some of the Superfund sites. In the 1980s, the US Environmental Protection Agency (EPA) identified the top 1000 polluted sites in the United States, these included Love Canal and various missile construction facilities which were exempt from EPA regulations during the cold war: collectively the sites became known as the Superfund. "My consulting work was very interesting. I spent 6 years at Papadopulos, but eventually decided I was ready for a new challenge." That is when he came to Concordia.

"I like Concordia. It has accomplished a tremendous amount in a very short period of time. It has an open-minded mission and policies which attract good faculty and students. This university has a lot of potential on tap." Dr. Drolet is very excited about working at Concordia at this point in time. He believes that the difficulties which the University and Faculty have endured over the past two years may have a silver lining. "Universities in Canada and Québec are at a crossroads, major changes are just around the corner. Because of the issues which came to light following the events of 1992, Concordia has begun to face these changes ahead of many other institutions. We are going to be very successful, as long as we rise to the challenge of reinventing ourselves for the twenty-first century."



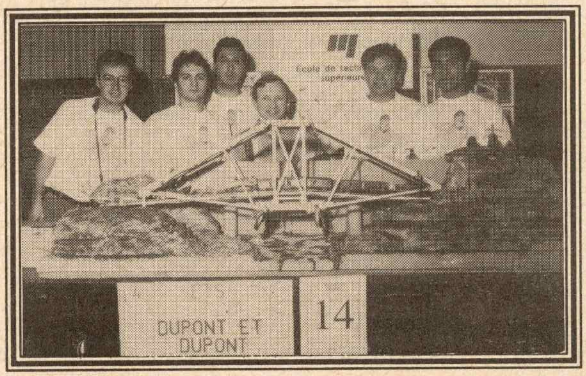
Except for the time he spent as a TA at Princeton, this has been Dr. Drolet's first teaching experience. "I like teaching. It's really hard, but it's really rewarding." Because the environmental option in Civil Engineering is new this year, all of his course notes were developed from scratch. "It was really frightening at first. The students are very demanding, if you're not solid in your knowledge, they let you know." But despite all the work required, and the undergraduates who "occasionally whine too much", he finds the job more than bearable. "I feel strongly about training the next generation of engineers," he explains. "It also helps that the Department did such a good job of setting up the environmental engineering option."

With all the work required to develop new courses Dr. Drolet says his research has been on the back burner for a while, although he is involved in several projects at the moment. Shortly after his arrival in Montréal, he inherited the administration of a collaborative research project between Concordia, the University of Moncton, the University of Jordan and ICARDA in Syria. Because of unavoidable delays in implementation, the research proposal has been modified, but he is confident that the team will get the go ahead to develop a computer model for optimizing the use of rainfall in semi-arid regions. He is also waiting to hear if some research he began while in the US will receive Phase II funding from the National Science Foundation. "In this project we are trying to create a software development tool which will facilitate the creation of finite-element models for any number of applications. It will be an invaluable time-saving tool for engineers because right now you have to reinvent the wheel each time you want to develop a model." His final project is a bit more pressing. Along with two associates, he is developing a real-time in situ monitoring system for parameters of environmental quality. By the end of May, they are supposed to deliver a prototype to the Dublin Corporation (Ireland) for the monitoring of waterways around the city.

For more information about the environmental option of Civil Engineering, please contact the Department at 848-7800.

Concordia University Bridge Building Competition

March has come and gone and that means that the Bridge Building Competition is behind us for another year. The 11th annual competition was a SMASHING success. We entertained 35 teams from across Canada and 2 teams from the United States. The Crusher, which was donated by Wainbee Inc. last year, went a perfect 37-0, allowing no bridge to leave intact. Despite the loss of their hard work, all the competitors left having had a great time and eagerly making plans to return next year. The Competition's success was due in large part to the hard work of many volunteers. Special thanks goes to the members of the judging panel, Professor Cedric Marsh (Civil), Dr. S. Thimmhardy (Civil) and Dr. Richard Guy (CBS).



L'École du Technologie Supérieure (ETS) was the big winner, taking three of the top five prizes. Students at ETS receive full course credit for their design, construction and presentation of their bridges. While Concordia did not place among the top five teams, we did bring home the aesthetics prize for the Bowstring III entry. A full list of winners appears at right.

1st Place
École du Technologie Supérieure
Dupont et Dupont (1581 lbs)

2nd Place
École du Technologie Supérieure
Les Pontonniers (1574 lbs)

3rd Place
Lakehead University
Group Therapy (1313 lbs)

4th Place
École du Technologie Supérieure
Goulots (785 lbs)

5th place
University of Western Ontario
London Bridge (737 lbs)

Aesthetics Prize
Concordia University
Bowstring III

Faculty Prominent at CCSL Awards

The Concordia Council on Student Life presented its awards on Monday, April 10, and members of the Faculty of Engineering and Computer Science figured prominently among the winners.

Four students won Outstanding Contribution Awards. Their dedication and devotion to student life at Concordia is evident in the remarks made by the people who nominated them for these awards.

Moataz El-Karmalawy, President of the Engineering and Computer Science Graduate Association "He took me on a tour around the university, and helped me in registering and even helped me in finding a place to live."

Persephone Gesanidis, Vice-President, 1995 Quebec Engineering Competition "Ms. Gesanidis devoted an outstanding amount of energy and effort to the organization of the 1995 Quebec Engineering Competition, and was instrumental in obtaining extensive media coverage of this event. ... She approached each task professionally and maintained an enthusiastic attitude throughout the months leading up to the event."

Alan Reid, Vice-President (Academic), Engineering and Computer Science Association "He has always promoted the interests of students while remaining diplomatic and sensitive. ... He follows through with every issue he believes in and never fails to stand up when everyone else has fallen."

Robert Turriciano, President, 1995 Quebec Engineering Competition "Robert exceeded the ordinary perception of what an organizer should do. By using his personal initiative and drive he ensured that the competition would be the most successful to date."

Dr. Ching Suen, Associate Dean (Research), received the CCSL Award for Teaching Excellence. "Dr. Suen is an effective lecturer who conveys his ideas clearly and in a stimulating way. ...[He] possesses a special talent that motivates his graduate students to conduct leading edge research."

Young Natives Tour Faculty

As part of its initiative to make engineering and computer science more accessible to students from Aboriginal communities, the Faculty hosted 30 grade 8 students from Kahnawake Survival School on Wednesday, April 5. After meeting with Dean Taddeo and Prof. Corinne Jetté, the students, and their teachers, spent two hours touring some of the Faculty's more interactive laboratories. They traveled the world through MOSAIC in a Computer Science lab, flew an airplane in the Simulation Lab, learned about oxygen eating bacteria in Environmental Engineering, explored multimedia and got a good look at the concrete toboggan and the SAE hybrid electric Corsica. In the afternoon the students were able to test their own engineering abilities by building towers out of straws, toothpicks and shaving cream.

The Faculty's Access to Engineering Programme is a joint initiative with l'Ordre des ingénieurs du Québec and the Canadian Aboriginal Science and Engineering Association.

Dean's Awards Ceremony

The Faculty honoured its outstanding students at an awards ceremony on March 14, 1995. The names of students who were on the 1993-94 Dean's List and 1994-95 Canada Scholars appeared in the March issue of Bits. The following students also won scholarships or prizes.

Fall Entrance Scholarship	Nancy Orsini
Mature Students' Entrance Scholarship	Stylianos Alevizos
The Concordia Shuffle Entrance Scholarship	Thieu Vinh Dang L.H. Wijenathan
The Allied-Signal Aerospatiale Canada - Benedix Avelex Inc. Scholarship	Milorad Gavrilovic
The Canadian Marconi Company Scholarship	Nestor Caouras David Salhany
The James McQueen Scholarship	Sylvia Tamme
The Magil Construction Ltd. Scholarship	Luisa Dodaro Ho Ching Lai Ho Kit Lai Antoine Basbous Raymond Chung Asifur Choudhury
The Peter Matthews Memorial Scholarship	Vitlay Iourtchenko
The R.L. Weldon Scholarship	Kevin Neden
The Hewlett Packard Ltd. Calculator Prize	Abbas Charafeddine William D'Orazio Mina Danesh Peter Huber Abbas Ismail Parmjit Kanth Daniel Leibu Barry Messier Kevin Neden Abrahim Noor
The John H. Chapman Memorial Prize	Mehran Ghomi
The Unitel Award to Canada Scholars in Electrical & Telecommunications Engineering	Mina Danesh

Get Together in Computer Science Community

On March 2, 1995, the Department of Computer Science hosted its second academic event of the year. The mini conference, which focused on graduate studies and the work force, was organized by Dr. V.S. Alagar, Chair of the Department, in an effort to encourage exchange between students and faculty. Approximately 100 students, a full third of the Department's full-time undergraduate enrollment, attended the event.

Several faculty members and two alumni, Ms. R. D'Almedia and Ms. C. Yep, shared their personal experiences in graduate studies and the work force with students. After the presentations informal discussions on academic and professional opportunities continued well into the evening.

Given the success of this meeting the Department is considering making it an annual event.

TA Workshops

On Friday, September 1, 1995, the Faculty will hold a one-day Teaching Assistant workshop. This workshop is a must for anyone interested in receiving a marker, lab instructor or tutor contract for the 1995-96 academic year. For more information please contact the following departmental representatives.

CBS	Dr. O. Moselhi
Civil	Dr. M. Elektorowicz
Comp. Science	Dr. R. Shinghal
Elec. & Comp.	Dr. S. Krishnan
Mechanical	Dr. V. Latinovic

Anyone who would be willing to participate in the workshop as a facilitator or panelist should also contact their departmental representative.

Fifth year for Robowars

On Friday, March 24, the Concordia student chapter of the Canadian Aeronautics and Space Institute (CASI) held its fifth annual robotics competition. Sixteen university, CEGEP and industry teams took part in a round-robin wrestling match, in which robots try to push each other out of a two meter wrestling ring. The panel of judges, which was headed by Dr. Suong Hoa (Mechanical), consisted of Mr. Ramesh Ahooja, Drs. Norman Ryan and Ramesh Rajogopalan from the Department of Mechanical Engineering, Mr. Ken Deegan and Dr. Rajnikant Patel from Electrical and Computer Engineering and Mr. Wanping Zheng from the Canadian Space Agency. They awarded points to each entry based on both fighting ability and design. And the winners were...

1st Place
Richard and Charles Allix
Out-to-Lunch Box
Arts & Science

2nd Place
David Chu
Techno Peasant
Computer Science

3rd Place
Dominic Ng
Asbestos
Mechanical Engineering

The competition was organized by the members of the CASI Executive committee Raji Bansal, Mike Rinaldi and Majid Salame.

News from REACH

For the seventh summer, engineering and computer science undergraduates at Concordia and McGill will invite young children to discover the world of science and engineering at REACH. The directors for this year ‘s camp are Marco Arquilla, a third year electrical engineering student from Concordia, and Shelley Robinson, a first-year mechanical engineering student from McGill. Marco and Shelley have already been very busy, hiring staff, raising funds and organizing school tours for the months of May and June.

This summer, in addition to launching rockets and cracking concrete, campers will have the opportunity to pick up a bit of Russian. Through the Internet REACH has established a link with a similar camp run by the Siberian branch of the Russian Academy of Sciences at the Institute of Computational Technologies in Novosibirsk, Russia. The two camps hope to have campers collaborate on projects through the Internet.

REACH begins on June 26, 1995. For more information call 398-8484, or check out REACH through the World Wide Web, their address is http://www.ee.mcgill.ca:80/~reach/

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Dawn Wiseman

Contributors:
David Altman
Christopher Malin
Ted Stathopoulos

Photographs:
Winston Cross
Owen Egan

Bits
welcomes
submissions from
the members of
the
Faculty community.
Please send submissions,
comments and letters to:

Dawn Wiseman

LB 1009-1
Phone: 848-3073
Fax: 848-4509
Email:
dawn@hobbit.concordia.ca